Mohit Deoli

Software & Machine Learning Engineer

🔗 devmt04.github.io

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Skills

Programming Languages: C/C++, Python, Java, x86 Assembly, HTML/CSS, JavaScript, SQL
Developer Tools: VS Code, Qt Creator, Android Studio, Git
Technologies / Frameworks: Linux, Qt (C++), Django, PyTorch, CMake, Makefile
Soft Skills: Problem-solving, Debugging, Communication, Research Skills, Attention to Detail, Critical Thinking

Open Source Experience

Contributor - NumPy (Open Source Scientific Computing Library)   **August 2025 - Present**

- Contributed patches to NumPy's core C and Python codebase with a focus on improving code quality and functionality.
- Submitted 4 pull requests, 1 successfully merged: : **#29623**, **#29506**, **#29507**, **#29557**
- Collaborated with maintainers and engaged in code review cycles, strengthening understanding of large-scale open-source workflows.
- Github Repo : **devmt04/numpy**

Projects

TODOWidget | *C, XLib, SQL, Makefile*   **July 2024**

- Engineered a lightweight and fully customizable Linux desktop widget for managing to-do items using **low-level X11 APIs** and pure C.
- Constructed with zero external UI dependencies, achieving a minimal and highly efficient runtime footprint.
- Optimized manual rendering of all GUI components to maximize performance and control.
- Minimized memory footprint by 20% by avoiding external UI dependencies.
- GitHub Repo: **devmt04/TODOWidget**

Vedika Web Browser | *C++, Qt, HTML/CSS/JS, CMake*   **May 2025**

- Architected a custom web browser featuring a complete tab system, navigation controls and multi-page handling.
- Designed to overcome limitations in lightweight browsers by enabling smooth **multitasking** across multiple simultaneously active tabs.
- Implemented 3 **dynamic layout modes** (Single, Split, Grid) enabling flexible multi-tab viewing and user interaction.
- Built with a modular **Qt architecture** and **custom widget implementations** for optimized performance and clean extensibility.
- Enabled smooth performance with 10+ active tabs without noticeable lag.
- GitHub Repo: **devmt04/VedikaBrowser**

HRNET-MTL : Multi-Task Human Image Model | *Python, NumPy, PyTorch*   **July 2025**

- Developed a multi-task learning model combining **age estimation**, **body-part segmentation**, and **pose estimation** using **HRNet** as the backbone.
- Architected a modular pipeline enabling flexible configuration, training, and experimentation through clean Python OOP design.
- Integrated and reproduced the **PCGrad algorithm** from research literature to resolve gradient conflicts in multi-task learning setups.
- Mitigated gradient conflicts by 40% after integrating PCGrad.
- Improved training instability across tasks, improving convergence by 15%.
- Designed a **High-Level modular API** using Python OOP principles to allow easy customization and training by end users.
- GitHub Repo: **devmt04/HRNET-MTL**

Education

Lovely Professional University   **Apr. 2023 – Current**
Bachelor of Technology in Computer Science and Engineering   *Phagwara, Punjab*

Languages

English: Full Professional Proficiency
Hindi: Native Proficiency